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(54) NICKEL ELECTRODE ACTIVE MATERIAL, AND NICKEL ELECTRODE AND ALKALINE BATTERY USING SAME

(57)Abstract:

PURPOSE: To increase the density of nickel hydroxide powder, prevent the formation of  $\gamma$ -NiOOH, and achieve an extension of the life and an improvement in utilization factor of an active material by using a porous alkali resistant metal fiber base as a collector, adding a specified amount of zinc to a nickel hydroxide powder active material, and charging with a paste mainly containing a nickel electrode active material laid in the solid solution state.

CONSTITUTION: A specified amount of zinc is added to a nickel hydroxide powder active material so that the zinc is laid in the solid solution state in nickel hydroxide crystals, the development of inner transition pores having pore diameters of 30 $\mu$ m or more is prevented, and the total pore capacity is controlled to be less than 0.05ml/g, forming a nickel electrode active material. The addition amount of the zinc is 3-10%wt. A nickel electrode is formed by using a porous alkali resistant metal fiber base as a collector, and charging with a paste mainly containing said nickel electrode active material. A battery is assembled using the nickel electrode before formation, and allowed to stand one day or more after the injection of an electrolyte. After dissolution-redeposition of a cobalt compound additive, it is first charged to form an alkali battery.

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